

FEATURES

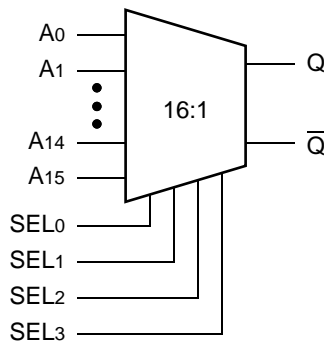
- 850ps Data Input to Output
- Extended 100E VEE range of -4.2V to -5.5V
- Differential output
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pull-down resistors
- Fully compatible with Motorola MC10E/100E164
- Available in 28-pin PLCC package

DESCRIPTION

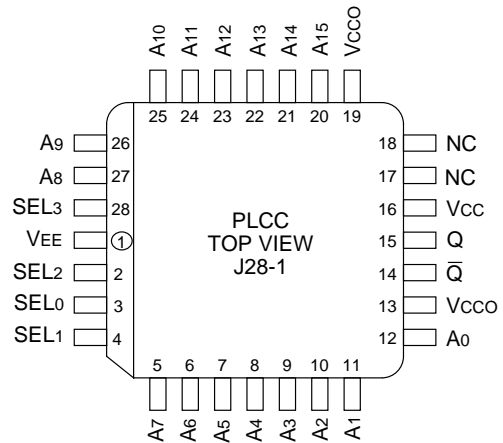
The SY10/100E164 are 16:1 multiplexers with a differential output. The select inputs (SEL_{0,1,2,3}) control which one of the sixteen data inputs (A₀-A₁₅) is propagated to the output.

Special attention to the design layout results in a typical skew between the 16 inputs of only 50ps.

BLOCK DIAGRAM



PIN CONFIGURATION



PIN NAMES

| Pin | Function |
|----------------------------------|---------------------------|
| A ₀ – A ₁₅ | Data Inputs |
| SEL[0:3] | Select Inputs |
| \bar{Q} , Q | Outputs |
| V _{CCO} | V _{CC} to Output |

TRUTH TABLE

| SEL3 | SEL2 | SEL1 | SEL0 | Data |
|------|------|------|------|------|
| L | L | L | L | A0 |
| L | L | L | H | A1 |
| L | L | H | L | A2 |
| L | L | H | H | A3 |
| L | H | L | L | A4 |
| L | H | L | H | A5 |
| L | H | H | L | A6 |
| L | H | H | H | A7 |

| SEL3 | SEL2 | SEL1 | SEL0 | Data |
|------|------|------|------|------|
| H | L | L | L | A8 |
| H | L | L | H | A9 |
| H | L | H | L | A10 |
| H | L | H | H | A11 |
| H | H | L | L | A12 |
| H | H | L | H | A13 |
| H | H | H | L | A14 |
| H | H | H | H | A15 |

DC ELECTRICAL CHARACTERISTICS

VEE = VEE (Min.) to VEE (Max.); VCC = VCC0 = GND

| Symbol | Parameter | TA = 0°C | | | TA = +25°C | | | TA = +85°C | | | Unit | Condition | |
|-----------------|----------------------|----------|------|------|------------|------|------|------------|------|------|------|-----------|---|
| | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | | | |
| I _{IH} | Input HIGH Current | — | — | 150 | — | — | 150 | — | — | 150 | μA | — | |
| I _{EE} | Power Supply Current | 10E | — | 59 | 71 | — | 59 | 71 | — | 59 | 71 | mA | — |
| | | 100E | — | 59 | 71 | — | 59 | 71 | — | 68 | 81 | | |
| | | | | | | | | | | | | | |

AC ELECTRICAL CHARACTERISTICS

VEE = VEE (Min.) to VEE (Max.); VCC = VCC0 = GND

| Symbol | Parameter | TA = 0°C | | | TA = +25°C | | | TA = +85°C | | | Unit | Condition |
|--------------------------------------|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|------|-----------|
| | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | | |
| t _{PLH} t _{PHL} | Propagation Delay to Output A Input SEL0 SEL1 SEL2 SEL3 | 350 500 400 400 400 | 600 700 675 675 550 | 850 900 900 900 700 | 350 500 400 400 400 | 600 700 675 675 550 | 850 900 900 900 700 | 350 500 400 400 400 | 600 700 675 675 550 | 850 900 900 900 700 | ps | — |
| t _{skew} | Within-Device Skew | — | 50 | — | — | 50 | — | — | 50 | — | ps | 1 |
| t _r t _f | Rise/Fall Times 20–80% | 275 | 400 | 550 | 275 | 400 | 550 | 275 | 400 | 550 | ps | — |

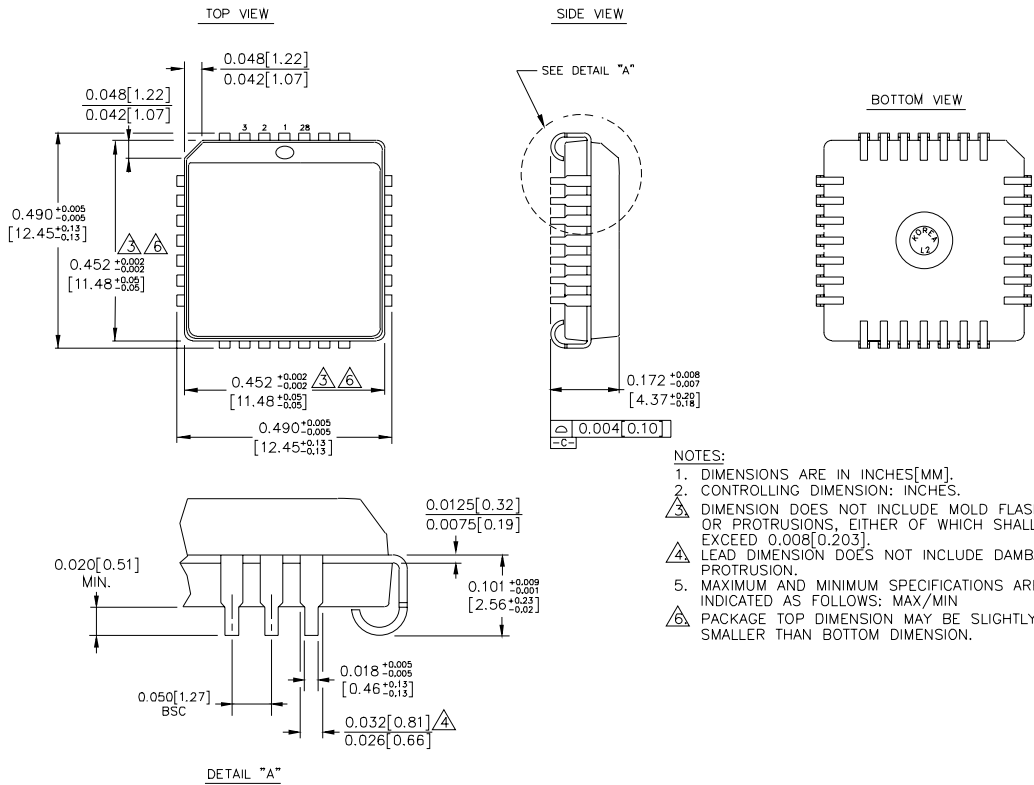
NOTE:

1. Within-device skew is defined as the difference in the A to Q delay between the 16 different A inputs.

PRODUCT ORDERING CODE

| Ordering Code | Package Type | Operating Range |
|---------------|--------------|-----------------|
| SY10E164JC | J28-1 | Commercial |
| SY10E164JCTR | J28-1 | Commercial |
| SY100E164JC | J28-1 | Commercial |
| SY100E164JCTR | J28-1 | Commercial |

28 LEAD PLCC (J28-1)



- NOTES:**
1. DIMENSIONS ARE IN INCHES[MM].
 2. CONTROLLING DIMENSION: INCHES.
 3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.008[0.203].
 4. LEAD DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION.
 5. MAXIMUM AND MINIMUM SPECIFICATIONS ARE INDICATED AS FOLLOWS: MAX/MIN
 6. PACKAGE TOP DIMENSION MAY BE SLIGHTLY SMALLER THAN BOTTOM DIMENSION.

Rev. 03

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